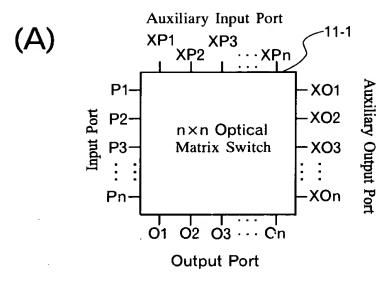
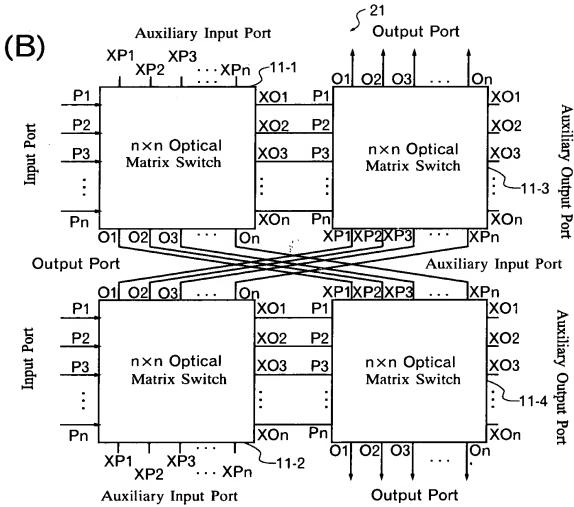
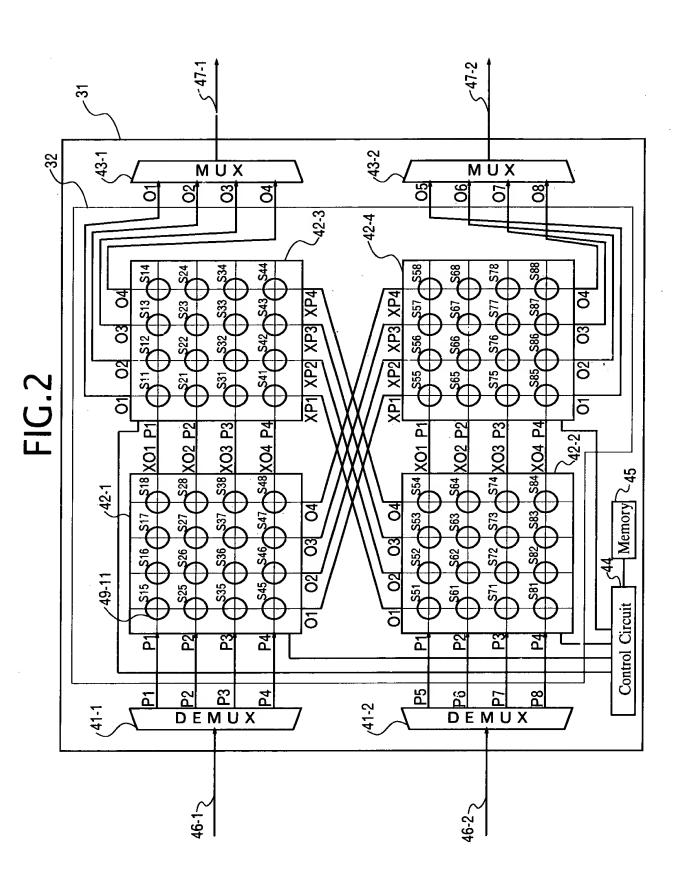
#### FIG.1



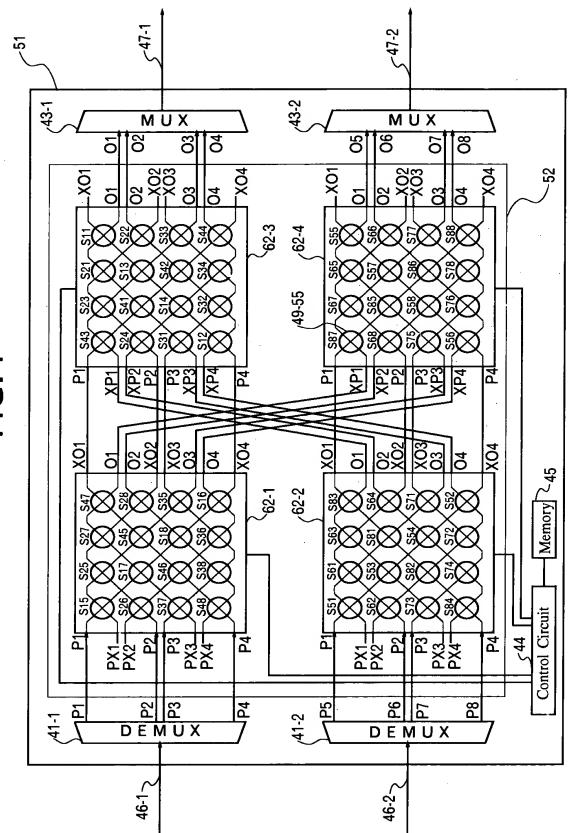




## FIG. 3

_			_	_	_	_		_	_
	8	S14	S24	<b>S34</b>	S44	S58	89S	S78	S88
Element	7	S13	S23	S33	S43	S57	292	S77	S87
Switch	9	S12	.S22	S32	S42	S56	998	S76.	S86
Optical	5	S11	S21	S31	S41	S55	S65	S75	S85
mber of	4	S18	S28	S38.	S48	S54	S64	S74	S84
lumn Nu	3	S17	S27	S37	S47	S53	S63	S73	S83
Col	2	S16	S26	S36	S46	S52	S62	S72	S82
	1	S15	S25	S35	S45	S51	S61	S71	S81
		1	2.	3	4	5	9	7	8
			1	cp L c	ədi Jiv	۱S	lec	vo itc me	Ю

FIG.4



### <u>-</u>

Column Number of Optical Switch Element  1 2 3 4 5 6 7 8  1 2 \$25 \$27 \$34 \$323 \$21 \$311  2 \$26 \$37 \$36 \$35 \$31 \$314 \$32  8 \$37 \$36 \$36 \$31 \$31 \$34 \$34  9 \$38 \$36 \$36 \$31 \$31 \$31 \$31  2 \$31 \$32 \$33 \$32  2 \$32 \$33 \$32 \$33 \$32  2 \$32 \$33 \$32 \$33 \$33  2 \$33 \$32 \$33 \$33 \$34 \$34  2 \$32 \$33 \$36 \$36 \$35  2 \$33 \$34 \$38 \$36 \$35  2 \$33 \$38 \$36 \$36 \$35  2 \$33 \$38 \$36 \$37 \$36  2 \$33 \$38 \$38 \$38 \$38 \$35  3 \$31 \$31 \$31 \$31 \$31 \$31 \$31 \$31 \$31 \$3										
Column Number of Optical Switch  1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 \$25 \$27 \$38 \$23 \$23 \$31 \$31 \$31 \$31 \$31 \$31 \$31 \$31 \$31 \$3		æ	S11	S22	S33	S44	S55	998	S77	S88
Column Number of Optical Switch  1 2 3 4 5 6 1 2 3 4 5 6 1 2 3 4 5 6 1 2 \$25 \$27 \$38 \$23 \$23 \$31 \$31 \$31 \$31 \$31 \$31 \$31 \$31 \$31 \$3	Element	7	S21	S13	S42	S34	S65	S57	98S	S78
Column Number of Optical  1 2 3 4 5  1 2 3 4 5  1 2 3 4 5  2 826 817 845 828 824  2 826 817 845 828 824  3 837 846 818 835 831  6 8 862 853 881 864 868  0 0 0 8 884 874 872 855 856	Switch	9	S23	S41	S14	S32	<b>2</b> 92	S85	S58	9/S
Optical Switch Element  8 77 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8		5	S43	S24	S31	S12	S87	898	S75	S56
Optical Switch Element  8 77 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	mber of	4	S48	S28	S35	S16	S83	S64	S71	S52
Optical Switch Element  8 77 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	lumn Nu	3	S27	S45	S18	S36	S63	S81	S54	S72
Optical Switch Element	လ	2	S25	S17	S46	S38	S61	S53	S82	S74
Optical Switch Element		1	S15	S26	S37	S48	S51	S62	S73	S84
			1	2	3	4	5	9	. 7	8
				ĵ.	-	-	_	V V csl	vo; otio	R OI EI

47-1

MUX

ည်

-47-2

MUX

46-2>

46-1

0121 0131 0161 04 05 80 5 34 ဝိ XP8 8 8 8 XX 050 400 X 05 05 80 X 8×8 Optical Matrix Switch 8×8 Optical Matrix Switch Q 45 <u>8</u>6 Memory XP5 XP4 XP4 32-3 01 × 5. xP1 xP4xP5 xP8 = 32.4 = 01ᄧᇎ **FIG.**6 X08 P8 4 P4 P5 32-1~ 32-2~ 32-3~ 32-4~ X 8 0 X XX QQ X04 X05 X ő ő XP1 XP4XP5 XP8 8×8 Optical Matrix Switch Control Circuit 8×8 Optical Matrix Switch 05 8 9 5 P4 P5 P8 P4 P5 P8 7 2 DEMUX) P12 P13 P4 P5 B8 6 7 41-1 41-3 DEMUX **DEMUX** 

43-3

MUX

43-2

47-4

MUX

46-4>

46-3>

FIG.7

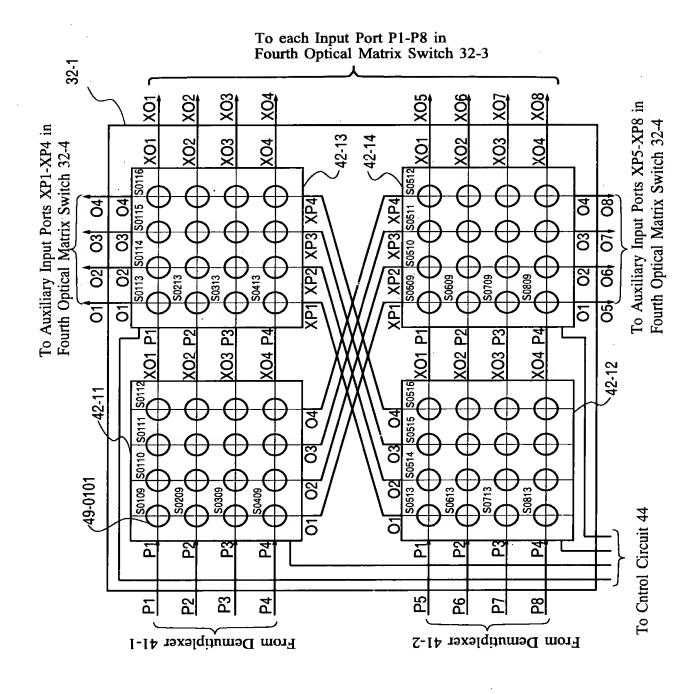
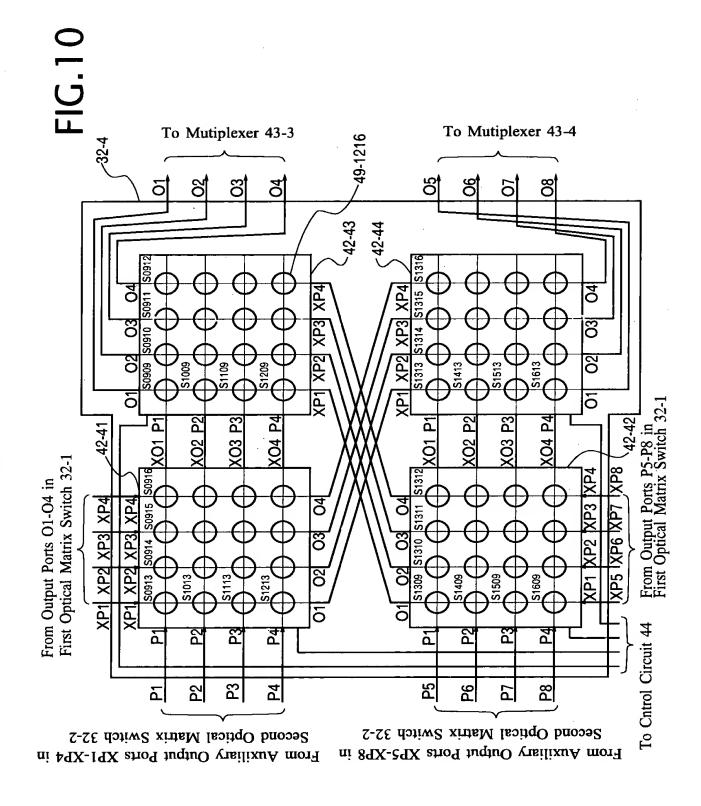


FIG.8

To each Input Port P1-P8 in Fourth Optical Matrix Switch 32-4 32-2 X02 8 S X 04 XO6 80 X X05 X07 Š To Auxiliary Input Ports XP5-XP8 in Third Optical Matrix Switch 32-3 To Auxiliary Input Ports XP1-XP4 in Third Optical Matrix Switch 32-3 42-23 X03 X02 X S S X 04 X02 X 04 8 S1304 0 XP4 8 80 0 XP2 XP3 XP4 S1303 <del>8</del>8 XP3 တိ 70 ဗ S1302 XP2 190 02 02 02 S1301 S1401 \$1501 S1601 05 9 XP1 01 2 X03 P3 6 **P**4 5 X04 P4 7 X 02 X X 04 X S S X 0 X02 × 42-22 S1308 S0904 42-21 9 9 S1307  $\frac{8}{6}$ **S**1306 49-0901 S1305 S0901 To Cntrol Circuit 44 <u>4</u> **P**2 **P3** P 7 7 띴 7  $\mathbb{S}$ **P**6 Р 8 From Demutiplexer 41-4 From Demutiplexer 41-3

To Mutiplexer 43-1 To Mutiplexer 43-2 ප් 8 8 8 5 0 -42-34 9 XP1 XP2 XP3 XP4 XP1 XP2 XP3 02 02 5 ठ From Output Ports P5-P8 in First Optical Matrix Switch 32-2 XO4 P4 **P**4 P2 23 XO2 P2 X03 P3 X01 P1 42-31 ő X 04 X02 χ From Output Ports O1-O4 in Second Optical Matrix Switch 32-2 S0108 XP2 XP3 XP4 9 XP1 XP2 XP3 XP4 XP2 XP3 XP4 02 To Cntrol Circuit 44 4 2  $\Xi$ 8 <u>B</u> Р Ы First Optical Matrix Switch 32-1 First Optical Matrix Switch 32-1 From Auxiliary Output Ports XPI-XP4 in From Auxiliary Output Ports XP5-XP8 in

FIG.9



## <u>[</u>

						Column	Number	of Optic	al Switch	Column Number of Optical Switch Element							
		01	05	03	04	90	90	07	. 80	60	10	Ξ	12	13	14	15	16
	01	S0109	S0110	S0111	S0112	S0113	S0114	S0115	S0116	S0105	S0106	S0107	S0108	S0101	S0102	S0103	S0104
tue	02	S0209	S0210	S0211	S0212	\$0213	S0214	S0215	S0216	S0205	S0206	S0207	S0208	S0201	S0202	S0203	S0204
lu	03	80309	S0310	S0311	S0312	S0313	S0314	S0315	S0316	S0305	90£0S	S0307	80308	S0301	S0302	S0303	S0304
EIF	04	S0409	S0410	S0411	S0412	S0413	S0414	S0415	S0416	S0405	S0406	S0407	S0408	S0401	<b>S0402</b>	S0403	S0404
ųс	05	S0513	S0514	S0515	S0516	S0509	S0510	S0511	S0512	S0501	S0502	S0203	S0504	S0505	S0506	2020S	S0508
yite	90	S0613	S0614	S0615	S0616	6090S	80610	80611	S0612	S0601	S0602	E090S	S0604	S0605	9090S	2090S	8090S
\ <u>\</u> S	07	S0713	S0714		S0715 S0716	80Z0S	80710	S0711	S0712	S0701	S0702	S0703	S0704	S0705	S0706	S0707	S0708
cs	98	S0813	S0814	S0815	S0816	6080S	S0810	S0811	S0812	S0801	S0802	S0803	S0804	S0805	<b>S0806</b>	20807	S0808
itq	60	S0901	S0902	S0903	S0904	S0905	9060S	2060S	8060S	S0913	S0914	S0915	S0916	6060S	S0910	S0911	S0912
0	10	S1001	\$1002	\$1003	S1004	S1005	S1006	S1007	S1008	S1013	S1014	S1015	S1016	S1009	S1010	S1011	S1012
ļ0 .	=	S1101	S1102		S1103 S1104	\$1105	S1106	S1107	S1108	\$1113	S1114	S1115	S1116	S1109	\$1110	S1111	S1112
190	12	\$1201	S1202		S1203 S1204	S1205	S1206	S1207	S1208	\$1213	\$1214	\$1215	\$1216	S1209	S1210	S1211	S1212
Juir	13	\$1305	\$1306	S1307	S1307 S1308	\$1301	\$1302	S1303	S1304	S1309	\$1310	\$1311	\$1312	S1313	S1314	\$1315	S1316
אי	14	S1405	S1406	S1407	S1407 S1408	S1401	S1402	S1403	S1404	S1409	S1410	S1411	S1412	S1413	S1414	<b>S1415</b>	S1416
MC	15	S1505	S1506	S1507	S1507 S1508	S1501	S1502	\$1503	S1504	S1509	\$1510	S1511	S1512	S1513	<b>S1514</b>	S1515	S1516
Я	16	S1605	S1606		S1607 S1608	\$1601	S1602	\$1603	\$1604	S1609	S1610	S1611	S1612	S1613	S1614	\$1615	S1616

# FIG. 12

						Column	Column Number of Optical	of Optic	al Switch	Switch Element	٠						
		01	02	03	04	92	90		80	60	10	11	12.	13	14	15	16
	01	S0109	S0209	S0211	S0411	S0415	S0215	S0213	S0113	S0105	S0205	S0207	S0407	S0403	S0203	S0201	S0101
tue	02	<b>S0210</b>	S0111	S0409	S0212	S0216	S0413	S0115	S0214	<b>S0206</b>	S0107	S0405	S0208	S0204	S0401	S0103	S0202
w	03	S0311	S0410	S0112	S0309	S0313	S0116	S0414	S0315	20307	S0406	S0108	S0305	S0301	S0104	S0402	S0303
13	9	S0412	S0312	S0310	S0110	S0114	S0314	80316	S0416	S0408	8020S	<b>90808</b>	S0106	S0102	S0302	S0304	S0404
ųэ	9	S0513	S0613	S0615	S0815	S0811	S0611	6090S	80209	S0501	S0601	S0603	S0803	20807	S0607	S0605	S0505
NİF	90	S0614	S0515	S0813	<b>S0616</b>	S0612	6080S	S0511	S0610	S0206	S0503	S0801	S0604	8090S	S0805	S0507	90908
^S	07	S0715	S0814	S0516	S0713	8070S	S0512	S0810	S0711	S0703	S0802	S0504	S0701	S0705	S0508	80806	S0707
csl	80	S0816	S0716	S0714	S0514	S0510	S0710	S0712	S0812	S0804	S0704	S0702	S0502	S0506	<b>S0706</b>	S0708	80808
þ£i	60	S0901	\$1001		S1003 S1203	S1207	S1007	S1005	S0905	S0913	S1013	S1015	\$1215	S1211	\$1011	S1009	6060S
0 :	9	S1002	S0903	\$1201	S1004	S1008	S1205	2060S	S1006	S1014	S0915	\$1213	S1016	S1012	S1209	S0911	S1010
ļo .	Ξ	S1103	S1202	S0904	S1101	S1105	8060S	S1206	S1107	S1115	\$1214	S0916	S1113	S1109	S0912	S1210	S1111
ıəc	12	S1204	S1104	\$1102	<b>S0902</b>	9060S	S1106	S1108	S1208	\$1216	S1116	S1114	S0914	S0910	S1110	\$1112	S1212
JWI	13	S1305	S1405	S1407	S1607	S1603	S1403	S1401	\$1301	S1309	S1409	S1411	S1511	S1615	S1415	S1413	S1313
Νי	14	S1406	\$1307	\$1605	S1408	S1404	S1601	S1303	S1402	S1410	S1311	S1609	S1412	S1416	S1613	\$1315	S1414
ΜC	15	S1507	S1606	\$1308	S1505	S1501	\$1304	S1602	S1503	\$1511	S1610	S1312	S1509	S1513	S1316	S1614	S1515
Я	16	S1608	\$1508	S1506	S1506 S1306	S1302	S1502	S1504	S1604	S1612	\$15:2	S1510	S1310	S1314	S1514	S1516	S1616

### FIG.13 Prior Art

